

# **Lead Safety Program**

**LG #17**





# A. Background



# **A Few Facts about Lead**

- ★ **Been in use for thousands of years**
- ▮ **Toxic to the human body**
- ▮ **Enters the body through inhalation and ingestion**
  - **Can affect the blood, kidneys, nervous system, and reproductive system**
  - ▮ **May adversely affect the fetus of a worker exposed to lead**



# Where is Lead Found Aboard Ship?

★ **Good question. It can be found in:**

- **Lead-based paint**
- ▢ **Ballast & radiation shielding**
- ▢ **Pipe joints**
- ▢ **Cable shielding**
- ▢ **Ammunition**
- ▢ **Batteries**
- ▢ **Weights and cable sockets**



# How can I be exposed to Lead?

★ Glad you asked. You can get it through

➤ Grinding

▢ Sanding

▢ Spraying

▢ Burning

▢ Melting

▢ Soldering

▢ Machining

▢ Handling contaminated protective clothing



# **The Greatest Hazard**

- ★ Comes from lead dust
- ▮ Can be easily inhaled or ingested
- ▮ Ingestion occurs when personnel eat, drink, smoke, or apply cosmetics without first washing the dust from their hands
- ▮ Exposure eliminated through good work practices & respiratory protection





## **B. The Lead Control Program**



# **Program Elements**

## **★ Industrial Hygiene Survey**

**➤ To pinpoint areas & processes of potential exposure**

### **▢ Control of lead in the workplace environment**

**▢ Through good work practices and protective equipment**

### **▢ Waste disposal procedures**

**▢ To protect the environment**



# **Program Elements**

## **★ Medical surveillance**

- To detect signs of lead poisoning through blood tests and examinations**

## **★ Written compliance plan**

## **▣ Worker and supervisor training**





# **C. Industrial Hygiene Surveys and Workplace Controls**



# **Industrial Hygienists & Surveys**

- ★ **Shall evaluate all workplaces where lead is used**
- ▢ **Where exposure potentials exist, exposure monitoring plans shall be established**
- ▢ **Shall identify need for written lead hazard compliance plan and provide content for the plan**
- ▢ **Notification of exposure monitoring results**



# **Workplace Control Practices**

- ★ **Main goal--prevent lead from entering the body**
  - **Substitute (use non-lead paint)**
  - ▢ **Keep mechanical grinding to a minimum**
    - ★ **Use authorized chemical strippers**
    - ★ **Equip tools with HEPA-filtered exhaust**
  - ▢ **Minimize heating of leaded materials**
    - ★ **Keep below 600° F**



# **More Control Practices**

- ★ **Maintain work surfaces as free of lead dust as possible**
  - **Use HEPA vacuums and wet methods**
- ▢ **Handle lead waste materials in accordance with Chapter B3 of OPNAVINST 5100.19 (series)**
- ▢ **Isolate hot work on lead from other operations**



# **More Control Practices**

- ★ **Use local exhaust ventilation**
- ▢ **Wear protective clothing if possibility of skin or eye irritation exists**
- ▢ **Wear approved respirators if exposure likely to exceed Permissible Exposure Limit (PEL)**

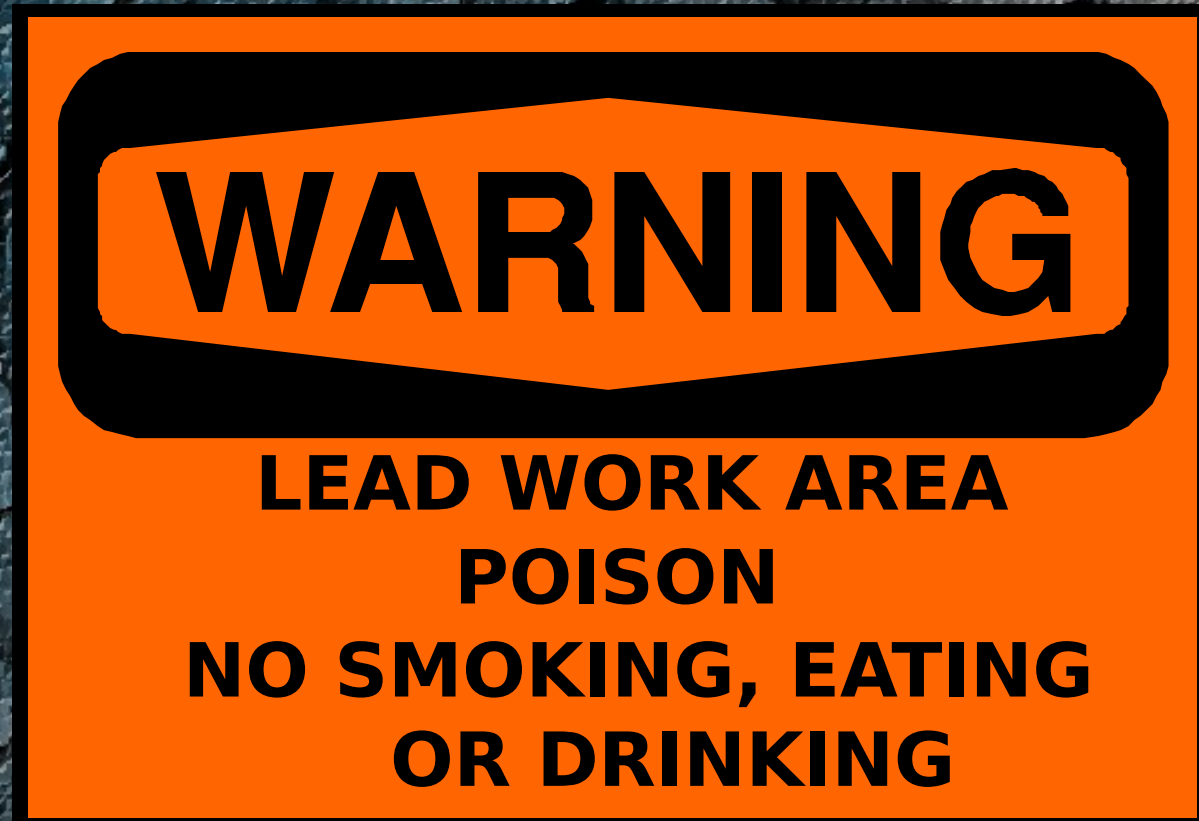


# Signs and Labels

- ★ Post warning signs at locations where concentrations may exceed PEL
- ▮ Use caution labels on containers of lead-contaminated materials



# Lead Warning Sign





# **Lead Caution Label**

**CAUTION**

**CLOTHING CONTAMINATED WITH LEAD  
DO NOT REMOVE DUST BY  
BLOWING OR SHAKING  
DISPOSE OF LEAD CONTAMINATED WASH  
WATER ACCORDING TO APPLICABLE  
LOCAL, STATE, OR FEDERAL REGULATIONS**



# Housekeeping and Personal Hygiene

## ▮ Housekeeping

- Maintain surfaces free of lead accumulation
- Use HEPA vacuums & wet methods
- ▮ DO NOT use compressed air for cleaning

## ★ Personal Hygiene

- ▮ Eating, drinking, smoking, chewing, and applying cosmetics prohibited
- ▮ Storage of food and tobacco products in lead areas prohibited





# **D. Environmental Protection and Waste Disposal**



# **Waste Disposal Procedures**

- ★ **Lead-containing waste materials are considered hazardous material (HM)**
- ▮ **Handle in accordance with Chapter B3**
- ▮ **Bag lead waste in impermeable containers**
- ▮ **Label bags/containers with caution labels**
- ▮ **Label bags/trash cans as “Lead Waste Only”**





## **E. Medical Surveillance**



# Getting Examined

## ★ Consists of:

- **Preplacement medical evaluation**
- ▢ **Blood lead monitoring**
- ▢ **Follow-up evaluation, based on:**
  - ★ Results of blood lead analysis
  - ★ Worker complaint
  - ★ Physician opinion



# **Important Note**

Inclusion in the program is based on measured airborne concentrations without regard to respirator use, and therefore does not indicate that an individual is overexposed to lead



# How Can Lead Affect My Health?

- ★ Absorbed into the blood stream and affects blood, kidneys, nervous system, and immune system
- ▢ Symptoms of lead poisoning include
  - Colic pains
  - ▢ Bluish spots on the gums
  - ▢ Weakness
  - ▢ Constipation
  - ▢ Paralysis on hands and forearms



# More Health Effects

- ★ Other chronic effects may include convulsions and permanent nervous system disorders
- In pregnant women, lead may cause fetal damage including:
  - ▶ Premature birth
  - Smaller babies
  - Decreased mental ability of the infant
  - Increased possibility of spontaneous abortion





# **F. Written Compliance Plan**



# **The Plan Must Include**

- ▮ **Description of each operation in which lead is emitted**
- ▮ **Description of specific means that will be employed to achieve compliance**
  - ▮ **Engineering plans and studies**
  - ▮ **Other methods for controlling exposures**
- ▮ **Report of the technology considered in meeting the PEL**



# **The Plan Must Include**

- ★ **Air monitoring data to identify source of lead emissions**
- ▮ **Detailed schedule for implementation of lead program**
- ▮ **Work practice program**
- ▮ **Administrative control schedule, if applicable**
- ▮ **Any other relevant information**